UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,366	02/25/2002	Walter Kastenhuber	50606	1346

26474 7590 10/03/2003

KEIL & WEINKAUF
1350 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

EXAMINER	
SORKIN, DAVID L	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/069,366	KASTENHUBER ET AL.	
	Examiner	Art Unit	
	David L. Sorkin	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-13* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *02/25/02* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-12, drawn to an impeller with plural vanes mounted on a hub shaft.

Group II, claim 13, drawn to a method of preparing polymer dispersions in a reactor with external heat exchanger.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The only thing the claims have in common is they involve an impeller. An impeller is not a special technical feature, because it known in the art. See for example Glass (US 3,322,070).

3. During a telephone conversation with Barbara Schwalge on 25 September 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claim 13 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

5. The drawings are objected to under 37 CFR 1.85(u)(1) and (h)(3). The unlabeled view to the upper right of Fig. 2 must be separately numbered with an Arabic number. It is suggested that this view be numbered "FIG. 6". In Figs. 1 and 3, the sectional line "A--A" should be changed to correspond to the new view number, for example, it should be VI--VI or 6--6 if the unlabeled view is numbered FIG. 6.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "housing" including the "spiral housing" must be shown or the features canceled from the claims. No new matter should be entered.

7. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

8. The specification should be amended in accordance with the drawing changes above. The Brief Description of the Several View of the Drawings should refer to the currently unlabeled view by an appropriate number, such as Fig. 6.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

11. In independent claim 1 recites the phrase "particularly comprising" and "it being possible". These phases make unclear whether following recited elements are required or optional.

12. Claim 2, is further rendered indefinite by the word "preferably". It is unclear what, if anything, claim 2 requires.

13. Independent claim 12 is made unclear by the phases "in particular" and "it being possible". These phases make unclear whether following recited elements are required or optional.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-3, 5, 6, 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson et al. (US 3,012,977). Regarding claim 1, Wilson ('977) discloses an apparatus comprising driven impellers (see Figs. 1 and 2) surrounded by a housing (23) and including a number of vanes (33) being mounted in the region of the hub (see Figs. 2 and 3) wherein a number of individual vanes (33) are freely mounded on the

shaft hub of an impeller so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Figs. 2 and 3). Regarding claims 2 and 3, the exit angle is 90 degrees (see Fig. 3). Regarding claim 5, the vanes bounding the pumping spaces have the same path of curvature on the front and rear side (see Figs. 2 and 3). Regarding claim 6, the vanes have the same radius of curvature on the front and rear side (see Fig. 3). Regarding claim 8, the edges of the vanes of the impeller are of a rounded form (see Fig. 2). Regarding claim 9, the ratio of the vane width to the vane thickness is greater than one (see Fig. 2). Regarding claim 11, Wilson ('977) discloses an impeller driven by a drive (20) and a number of vanes (33) being mounted in the region if the hub, wherein a number of individual vane (33) are freely mounted on the hub of the impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Figs. 2 and 3). Regarding claim 12, Wilson ('977) discloses an impeller capable of being driven by a drive (20) and a number of vanes (33) being mounted in the region of the hub and surrounded by a housing (23), wherein a number of individual vanes (33) are freely mounted on the hub of an impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed though uniformly (see Figs. 2 and 3).

16. Claims 1-3, 5, 6, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Glass (US 3,322,070). Regarding claim 1, Glass ('070) discloses an apparatus comprising a driven impeller (18) surrounded by a housing (7,13) and including a number of vanes (19) being mounted in the region of the hub (see Figs. 1 and 2) wherein a number of individual vanes (19) are freely mounded on the shaft hub

of an impeller so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Figs. 1 and 2). Regarding claims 2 and 3, the exit angle is 90 degrees (see Fig. 2; col. 2, lines 8-10). Regarding claim 5, the vanes bounding the pumping spaces have the same path of curvature on the front and rear side (see Fig. 2). Regarding claim 6, the vanes have the same radius of curvature on the front and rear side (see Fig. 2). Regarding claim 9, the ratio of the vane width to the vane thickness is greater than one (see Figs. 1 and 2). Regarding claim 10 the enveloping curve of the impeller is surrounded by a spiral housing (7,13). Regarding claim 11, Glass ('070) discloses an impeller (18) driven by a drive (see col. 2, lines 7-8) and a number of vanes (19) being mounted in the region if the hub, wherein a number of individual vane (19) are freely mounted on the hub of the impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 2). Regarding claim 12, Glass ('070) discloses an impeller (18) capable of being driven by a drive (see col. 2, lines 7-8) and a number of vanes (18) being mounted in the region of the hub and surrounded by a housing (7,13), wherein a number of individual vanes (18) are freely mounted on the hub of an impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed though uniformly (see Figs. 1 and 2).

17. Claims 1, 2, 5-7, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Weis (US 3,704,868). Regarding claim 1, Weis ('868) discloses an apparatus comprising a driven impeller (30) surrounded by a housing (11) and including a number of vanes (32) being mounted in the region of the hub (see Figs. 1 and 2)

wherein a number of individual vanes (32) are freely mounded on the shaft hub of an impeller so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 2). Regarding claim 2, the exit angle is 45 degrees based upon the description in col. 2 line 63 to col. 3 line 5. Regarding claim 5, the vanes bounding the pumping spaces have the same path of curvature on the front and rear side (see Fig. 2). Regarding claim 6, the vanes have the same radius of curvature on the front and rear side (see Fig. 2). Regarding claim 7, the center line of the vanes on the impeller describe a segment of a circle between the enveloping curve an the center of the hub (see col. 2, line 63 to col. 3 line 5). Regarding claim 9, the ratio of the vane width to the vane thickness is greater than one (see col. 3, lines 26-38 and col. 4, lines 26-32). Regarding claim 11, Weis ('868) discloses an impeller (30) driven by a drive (19) and a number of vanes (32) being mounted in the region if the hub, wherein a number of individual vane (32) are freely mounted on the hub of the impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed through uniformly (see Fig. 2). Regarding claim 12, Weis ('868) discloses an impeller (30) capable of being driven by a drive (19) and a number of vanes (32) being mounted in the region of the hub and surrounded by a housing (11), wherein a number of individual vanes (32) are freely mounted on the hub of an impeller, so that pumping spaces on the front side and rear side of the vanes of the impeller are flowed though uniformly (see Fig. 2).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson ('977) in view of Wissman (US 4,722,664). The apparatus of Wilson ('977) was discussed above with regard to claim 1. However, a PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Wilson ('977) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19).

21. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glass ('070) in view of Wissman (US 4,722,664). The apparatus of Glass ('070) was

discussed above with regard to claim 1. However, a PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Glass ('070) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19).

22. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weis ('868) in view of Wissman (US 4,722,664). The apparatus of Weis ('868) was discussed above with regard to claim 1. However, a PFA coating is not disclosed. Wissman ('664) teaches a PFA coating (see col. 2, lines 6-19). It is considered that it would have been obvious to one of ordinary skill in the art to have provided that impeller of Weis ('868) with a PFA coating, because Wissman ('664) explains that such a coating provides the benefit of corrosion resistance (see col. 1, lines 5-19).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

David Sorkin

CHARLES E. COOLEY
PRIMARY EXAMINER